

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1-18 (CANCELLED)

19 (NEW)- Monitoring device for dye baths in which a dye component is introduced during a period of time D that comprises:

- a transparency sensor for the liquid contained in said bath adapted to supply a signal representing the transparency of said bath for at least one spectral range and

- control means adapted to determine a reference point for transparency evolution of the bath corresponding to the transparency that the bath would have had if there had been no absorption of the colorant during the period of time D.

20 (NEW)- Monitoring device according to claim 19, wherein the control means are adapted to determine the end of the rinse period for said bath according to the transparency evolution of the bath.

21 (NEW)- Monitoring device according to claim 19 that is adapted to be combined with a dyeing machine comprising at

least one liquid circulation circuit containing the dye bath, and that comprises a positioning means for positioning the transparency sensor in a said liquid circulation circuit containing the dye bath.

22 (NEW)- Monitoring device according to claim 19 wherein the control means are adapted to determine said reference point by interpolating transparency evolution to the start of the introduction, interpolation carried out over the period of time D of the introduction of colorant into the dye bath.

23 (NEW)- Monitoring device according to claim 19 wherein the control means are adapted to determine a complementary reference point for transparency evolution for clean water by memorizing a value representing the signal output by the transparency sensor during a passage of clean water or white bath in the sensor.

24 (NEW)- Monitoring device according to claim 19 wherein the control means are adapted to control the end of dyeing according to the evolution of the bath's transparency and at least one reference point for transparency evolution.

25 (NEW)- Monitoring device according to claim 19 wherein the control means are adapted to determine the end of dyeing when

the derivative for the transparency value is below a predefined value.

26 (NEW)- Monitoring device according to claim 19 wherein the control means comprise closed-loop control means that control the transparency sensor's sensitivity according to the opacity of the liquid contained in the dye bath.

27 (NEW)- Monitoring device according to claim 19 wherein the control means comprise closed-loop control means that control the optic path taken by a light ray generated by the sensor in the liquid contained in the dye bath according to the opacity of the liquid contained in the dye bath.

28 (NEW)- Monitoring device according to claim 26 that comprises, in addition, an adjusting means for adjusting the thickness of the sample of dye bath water whose transparency is captured by the transparency sensor wherein the control means are adapted to control the adjusting means for adjusting the thickness in such a manner that the sample thickness is increased according to the transparency of the bath.

29 (NEW) - Monitoring device according to claim 28, wherein the adjusting means that adjusts thickness is adapted to

displace, with relation to each other, a light source and at least one optical fiber.

30 (NEW)- Monitoring device according to claim 19 wherein the control means comprise closed-loop control means for controlling the capture period of time for the transparency sensor according to the opacity of the liquid contained in the dye bath.

31 (NEW)- Monitoring device according to claim 19 wherein the control means comprise closed-loop control means for controlling amplification means that amplifies the signal/noise ratio of the signal output from the sensor, according to the opacity of the liquid contained in the dye bath.

32 (NEW)- Monitoring device according to claim 19 wherein the control means are adapted to utilize the Bert-Lambert law to determine the colorant concentration as a function of the transparency of the dye bath.

33 (NEW)- Monitoring device according to claim 19 wherein the control means are adapted to control the acidity and/or the salinity of the dye bath according to evolution of the transparency of the liquid contained in the dye bath.

34 (NEW)- Monitoring device according to claim 19 wherein the control means are adapted to control the temperature of the bath according to evolution of the transparency of the liquid contained in the dye bath.

35 (NEW)- Monitoring device according to claim 19 wherein the control means are adapted to control the quantity of colorant introduced into the dye bath according to evolution of the transparency of the liquid contained in the dye bath.

36 (NEW)- Monitoring device according to claim 19, adapted to be combined with a dyeing machine comprising at least one liquid circulation circuit comprising the dye bath, characterized in that it comprises:

- a taking means for taking a sample of the dye bath,
- a separating means for separating said sample from the dye bath and leaving said sample to rest for a period,
- a sensor of the transparency of the sample separated from the dye bath adapted to supply a signal representing the transparency of said sample for at least one spectral range and
- a rinsing means for rinsing the sensor.

37 (NEW)- Monitoring device according to claim 19, that comprises:

- a transparency measurement chamber for liquid coming from the dye bath comprising a light source adapted to successively output light in a plurality of different spectral bands,

- a single optoelectronic sensor adapted to receive the light rays coming from the light source after their passage through the measurement chamber and to output a signal representing the quantity of light received by said sensor and

- a demodulator synchronized with the light source to successively process the signals coming from the sensor to supply results corresponding to the different spectral bands successively output by the light source.

38 (NEW)- Dye bath monitoring method in which a dye component is introduced during a period of time D that comprises:

- a step of capturing the transparency of the liquid contained in said bath during which a signal representing the transparency of said bath is provided for at least one color and

- a step of determining a reference point for evolution of the bath's transparency corresponding to the initial transparency if the whole of the dye component had been

introduced and mixed to the dye bath in a fraction of the period of time D and at the start of the period of time D.